

WHAT IS CLAIMED IS:

[C001] 1. A method for forming a flow director on a component comprising a wall, said method comprising depositing at least one layer on the wall of the component, wherein said deposition includes shaping the at least one layer in accordance with a predetermined shape to form the flow director.

[C002] 2. The method of Claim 1, wherein said deposition comprises depositing a plurality of layers on the wall of the component and shaping the layers in accordance with the predetermined shape to form the flow director.

[C003] 3. The method of Claim 1, wherein the wall has a cold surface and a hot surface, wherein the at least one film-cooling hole extends through the wall for flowing a coolant from the cold surface to the hot surface, the film-cooling hole defining an exit site in the hot surface of the wall, and wherein said deposition comprises depositing the at least one layer on the hot surface of the wall.

[C004] 4. The method of Claim 3, wherein the flow director comprises a flow modifier adapted to direct the coolant flowing from the film-cooling hole and out of the exit site toward the hot surface of the wall.

[C005] 5. The method of Claim 3, wherein the flow director comprises a ridge extending along at least a portion of the exit site and further extending to a position downstream of the exit site.

[C006] 6. The method of Claim 1, wherein said deposition comprises:
delivering a mixture through a nozzle onto the wall to form the layer, the mixture comprising a powder dispersed in a liquid medium.

[C007] 7. The method of Claim 6, further comprising heating the layer.

[C008] 8. The method of Claim 6, wherein said deposition further comprises displacing the nozzle relative to the wall to form the at least one layer in accordance with the predetermined shape.

[C009] 9. The method of Claim 8, wherein said deposition further comprises controlling said movement of the nozzle relative to the wall to form the at least one layer in accordance with the predetermine shape.

[C010] 10. The method of Claim 1, wherein said deposition is performed a plurality of times at a respective plurality of positions on the wall of the component to form a plurality of flow directors on the wall of the component.

[C011] 11. The method of Claim 1, wherein the at least one layer comprises a metal.

[C012] 12. The method of Claim 1, wherein the at least one layer comprises a ceramic.

[C013] 13. The method of Claim 1, wherein the at least one layer comprises a material selected from the group consisting of metals, ceramics and combinations thereof.

[C014] 14. The method of Claim 1, wherein the component and a second component define a secondary cooling slot for receiving and guiding a secondary coolant flow, and wherein the flow director is adapted to enhance the secondary coolant flow along at least one of the component and the second components within the secondary coolant slot.

[C015] 15. The method of Claim 1, wherein said deposition is performed using a process selected from the group consisting of chemical vapor deposition, ion plasma deposition, electron beam physical vapor deposition, electroplating and combinations thereof.

[C016] 16. The method of Claim 15, wherein said deposition further comprises at least one masking step.

[C017] 17. A method for forming a flow director on a turbine component comprising a wall having a cold surface and a hot surface, wherein at least one film-cooling hole extends through the wall for flowing a coolant from the cold surface to the hot surface, the film-cooling hole defining an exit site in the hot surface of the wall, said method comprising:

depositing at least one layer on the wall of the component, wherein said deposition includes shaping the at least one layer in accordance with a predetermined shape to form the flow director.

[C018] 18. The method of Claim 17, wherein said deposition comprises depositing a plurality of layers on the wall of the component and shaping the layers in accordance with the predetermined shape to form the flow director.

[C019] 19. The method of Claim 17, wherein the flow director comprises a flow modifier adapted to direct the coolant flowing from the film-cooling hole and out of the exit site toward the hot surface of the wall.

[C020] 20. The method of Claim 17, wherein the flow director comprises a ridge extending along at least a portion of the exit site and further extending to a position downstream of the exit site.

[C021] 21. The method of Claim 17, wherein said deposition comprises:

delivering a mixture through a nozzle onto the wall to form the layer, the mixture comprising a powder dispersed in a liquid medium;

displacing the nozzle relative to the wall to form the at least one layer in accordance with the predetermined shape; and

controlling said movement of the nozzle relative to the wall to form the at least one layer in accordance with the predetermine shape.

[C022] 22. The method of Claim 21, further comprising heating the layer.

[C023] 23. The method of Claim 17, wherein said deposition is performed a plurality of times at a respective plurality of positions on the wall of the component to form a plurality of flow directors on the wall of the component.